

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (previously presented): A color conversion relation derivation method of deriving a color conversion relation between a first color space and a second color space, the color conversion relation derivation method comprising:

an area forming step that forms a plurality of areas filling the first color space;

a partial function derivation step that derives, for each of the areas formed in the area forming step, a partial function representative of a color conversion between coordinates in the area and coordinates of the second color space using a set of an arbitrary sample point provided in the first color space and a point in the second color space, which is associated with the sample point; and

a whole function derivation step that combines the partial functions for the respective areas derived by the partial function derivation step to derive a whole function representative of the color conversion relation through the first color space in its entirety.

2. (currently amended): AThe color conversion relation derivation method according to claim 1, wherein the area forming step forms, as the plurality of areas, a plurality of areas overlapping with one another, and
the whole function derivation step combines the partial functions in a range that the areas are overlapped with one another.

3. (previously presented): A color conversion relation derivation apparatus for deriving a color conversion relation between a first color space and a second color space, the color conversion relation derivation apparatus comprising:

an area forming section that forms a plurality of areas filling the first color space;

a partial function derivation section that derives, for each of the areas formed in the area forming section, a partial function representative of a color conversion between coordinates in the area and coordinates of the second color space using a set of an arbitrary sample point provided in the first color space and a point in the second color space, which is associated with the sample point; and

a whole function derivation section that combines the partial functions for the respective areas derived by the partial function derivation section to derive a whole function representative of the color conversion relation through the first color space in its entirety.

4. (previously presented): A color conversion relation derivation program storage medium storing a color conversion relation derivation program which causes a computer to operate as a color conversion relation derivation apparatus, when the color conversion relation derivation program is incorporated into the computer and is executed, the color conversion relation derivation apparatus comprising:

an area forming section that forms a plurality of areas filling the first color space;

a partial function derivation section that derives, for each of the areas formed in the area forming section, a partial function representative of a color conversion between coordinates in

the area and coordinates of the second color space using a set of an arbitrary sample point provided in the first color space and a point in the second color space, which is associated with the sample point; and

a whole function derivation section that combines the partial functions for the respective areas derived by the partial function derivation section to derive a whole function representative of the color conversion relation through the first color space in its entirety.

5. (new): The color conversion relation derivation method according to claim 1, wherein each area formed by the area forming step is of equal size.

6. (new): The color conversion relation derivation method according to claim 1, wherein the area forming step separates the first color space into a plurality of sections, wherein the plurality of areas are formed in the plurality of sections.

7. (new): A method of deriving a color conversion relation between a first color space and a second color space, comprising:
an area defining step that separates the first color space into a plurality of areas;
a partial function derivation step that derives, for each area defined by the area defining step, a partial function representative of a color conversion between the coordinates of the area of the first color space and corresponding coordinates of the second color space; and

a whole function derivation step that combines the partial functions of each said area to derive a whole function representative of the color conversion relation between the entire said first color space and the second color space.

8. (new): The method of claim 7, wherein the areas defined by the area defining step are of equal size.

9. (new): The method of claim 7, wherein the area defining step separates the first color space into a plurality of sections, wherein the plurality of sections are separated into the plurality of areas.

10. (new): The method of claim 7, wherein the whole function derivation step combines the partial functions of areas which are adjacent to each other in the first color space.

11. (new): The method of claim 10, wherein the adjacent areas are overlapping.

12. (new): The apparatus of claim 3, wherein the partial function derivation section comprises determining a weighted function of the set of arbitrary sample points to a point overlapping each of the plurality of areas.

13. (new): The apparatus of claim 3, wherein the set of arbitrary sample points comprise lattice points of an independent color space, as measured from color patches.